LUMPED LC SURFACE MOUNT

Band Pass Filter

SYBP-1420+

50Ω 1250 to 1560 MHz

THE BIG DEAL

- High Power Handling, 7W
- Small Size
- Temperature Stable
- Excellent Rejection

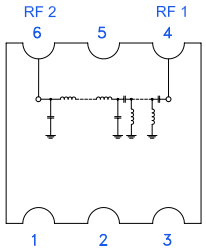


Generic photo used for illustration purposes only

APPLICATIONS

- Military Radio
- Cellular
- GSM
- ISM

FUNCTIONAL DIAGRAM



PRODUCT OVERVIEW

SYBP-1420+ is a 50Ω bandpass filter fabricated using SMT technology. The bandpass filter covers from 1250 to 1560 MHz offering low insertion loss and good matching within the passband. It is fabricated in a tiny housing with very good power handling capabilities.

ELECTRICAL SPECIFICATIONS[1,2] AT +25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Units
Passband	Center Frequency	Fc	—	—	1420	—	MHz
	Insertion Loss	F1-F2	1250 - 1560	—	2.2	2.9	dB
	Return Loss	F1-F2	1250 - 1560	8.5	11.7	—	dB
Stopband, Lower	Rejection	DC-F3	DC - 910	20	24	—	dB
Stopband, Upper	Rejection	F4-F5	2000 - 5000	18	25	—	dB

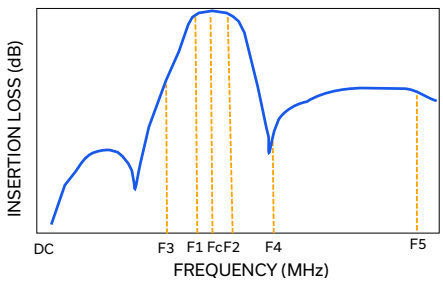
1. Tested in Evaluation Board P/N TB-SYBP-1420+.
2. This component should not be used as a DC-block. In applications where DC voltage and/or current is present at either the input or output ports, external DC blocking capacitors are required.

ABSOLUTE MAXIMUM RATINGS[3]

Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +100°C
Input Power[4]	7 W at +25°C

3. Permanent damage may occur if any of these limits are exceeded.
4. Power rating applies only to signals within the passband. Power rating above +25°C operating temperature decreases linearly to 3 W at +85°C.

TYPICAL FREQUENCY RESPONSE



REV. B
ECO-030101
SYBP-1420+
MCINU
260912

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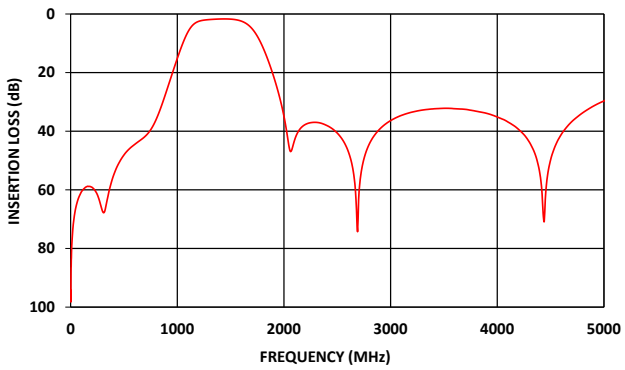
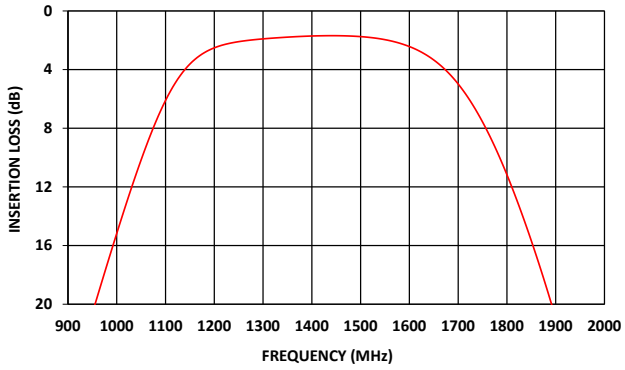
TYPICAL PERFORMANCE GRAPHS AT +25°C

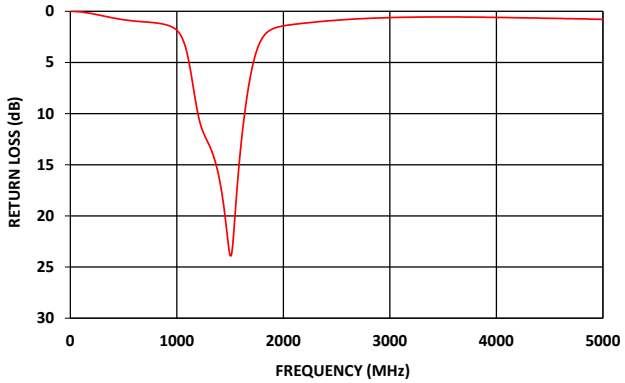
SYBP-1420+
INSERTION LOSS



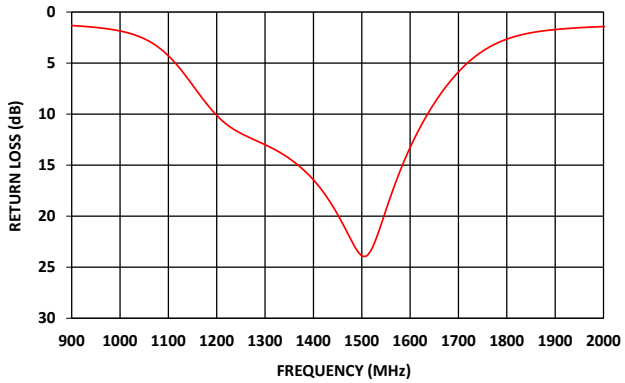
SYBP-1420+
INSERTION LOSS (Zoomed)



SYBP-1420+
RETURN LOSS



SYBP-1420+
RETURN LOSS (Zoomed)



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FUNCTIONAL DIAGRAM

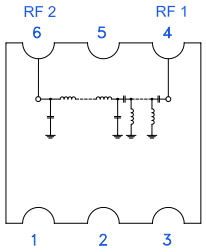
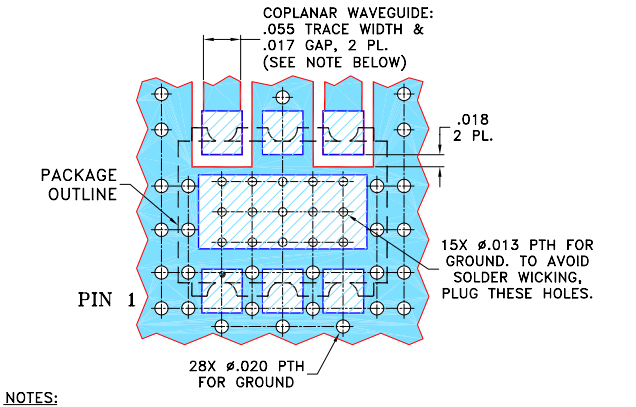


Figure 1. SYBP-1420+ Functional Diagram

PAD DESCRIPTION

Function	Pad Number	Description
RF1	4	Connects to RF Input Port
RF2	6	Connects to RF Output Port
GROUND	1,2,3,5	Connects to Ground on PCB, (See drawing PL-308)

SUGGESTED PCB LAYOUT



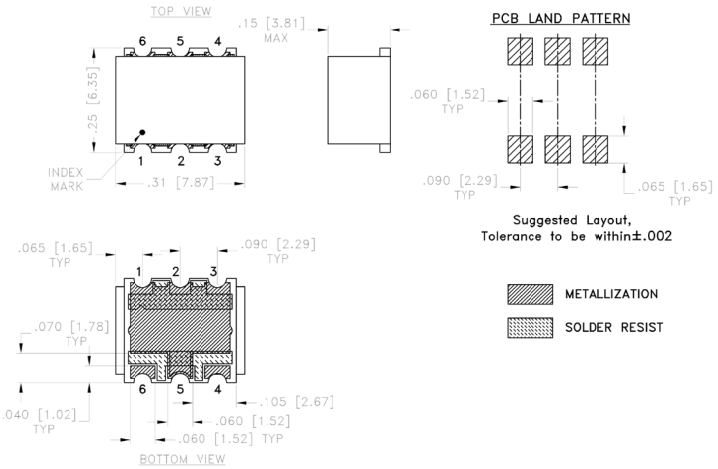
NOTES:
1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH THICKNESS .030" ± .002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH AND GAP MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Figure 2. Suggested PCB Layout

CASE STYLE DRAWING



Weight: .50g
Dimensions are in inches (mm). Tolerances: 2Pl. ± .01; 3Pl. ± .005

PRODUCT MARKING*: SYBP-1420

*Marking may contain other features or characters for internal lot control.

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ADDITIONAL DETAILED INFORMATION IS AVAILABLE ON OUR DASHBOARD CLICK HERE

Performance Data & Graphs	Data Graphs S-Parameter (S2P Files) Data Set (.zip file) De-embedded to device pads
Case Style	TT1423 Lead Finish: Gold over Nickel Plate
RoHS/REACH Status	Compliant
Tape and Reel	F2
Suggested Layout for PCB Design	PL-308
Evaluation Board	TB-SYBP-1420+ Gerber File
Environmental Rating	ENV02T1
MSL Level	MSL1

NOTES

A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.

B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.

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